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NEWS 5 AUG 11 STN AnaVist workshops to be held in North America
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NEWS 7 AUG 30 CASREACT - Enhanced with displayable reaction conditions
NEWS 8 SEP 09 ACD predicted properties enhanced in REGISTRY/ZREGISTRY

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STRUCTURE FILE UPDATES: 18 SEP 2005 HIGHEST RN 863382-78-9
DICTIONARY FILE UPDATES: 18 SEP 2005 HIGHEST RN 863382-78-9

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* available and contains the CA role and document type information.
*

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Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> s hexamethylene diisocyanate
11064 HEXAMETHYLENE
8595 DIISOCYANATE
3 DIISOCYANATES
8595 DIISOCYANATE
(DIISOCYANATE OR DIISOCYANATES)
L1 1850 HEXAMETHYLENE DIISOCYANATE
(HEXAMETHYLENE (W) DIISOCYANATE)

```
=> s desmodur n3400  
        4626 DESMODUR  
              1 N3400  
L2          1 DESMODUR N3400  
                  (DESMODUR (W) N3400)
```

```
=> s desmodur n3200  
        4626 DESMODUR  
          0 N3200  
L3      0 DESMODUR N3200  
          (DESMODUR (W) N3200)
```

```
=> s desmodur n3600  
        4626 DESMODUR  
          0 N3600  
L4          0 DESMODUR N3600  
                  (DESMODUR (W) N3600)
```

FILE 'CAPLUS' ENTERED AT 17:07:15 ON 19 SEP 2005
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FILE COVERS 1907 - 19 Sep 2005 VOL 143 ISS 13
FILE LAST UPDATED: 18 Sep 2005 (20050918/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s hologra? and desmodur
17609 HOLOGRA?
15933 HOLOG
13 HOLOGS
15934 HOLOG
(HOLOG OR HOLOGS)
20581 HOLOGRA?
(HOLOGRA? OR HOLOG)
3979 DESMODUR
14 DESMODURS
3986 DESMODUR
(DESMODUR OR DESMODURS)

L5 5 HOLOGRA? AND DESMODUR

=> d all 1-5

L5 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:972367 CAPLUS
DN 140:33675
ED Entered STN: 14 Dec 2003
TI ***Holographic*** data storage media comprising an aluminum salt compound and an asymmetric acrylate compound
IN Setthachayanon, Songvit; Phan, Xuan T.; Michaels, Mark David; Ihas, Benjamin C.
PA Inphase Technologies, Inc., USA
SO PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G11C013-04
ICS G03F007-004
CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2003102959 | A1 | 20031211 | WO 2003-US17011 | 20030529 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1508144 | A1 | 20050223 | EP 2003-756276 | 20030529 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| PRAI | US 2002-383608P | P | 20020529 | | |
| | WO 2003-US17011 | W | 20030529 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|--|---------------|-------|---|
| | WO 2003102959 | ICM | G11C013-04 |
| | | ICS | G03F007-004 |
| | WO 2003102959 | ECLA | G03F007/00B3; G03F007/027; G11C013/04C8 |

OS MARPAT 140:33675

AB A novel photoimaging system for a two-chem. system contg. liq. photoreactive asym. acrylate compd. contg. sulfur, arom. moieties, and optionally bromine, and an aluminum salt compd. is disclosed. The photoimaging system has high dynamic range (M/#) and sensitivity and unexpectedly high temp. and high humidity resistance. The photoimaging system retains its dynamic range when exposed to 60.degree.C for 4 wk while a compn. without the aluminum salt compd. lost 75% of its dynamic range under similar exposure conditions. In one embodiment, 2-10 % of a thiobutylacrylate dissolved in a two-component urethane matrix contg.

0.002-1 % of the aluminum salt compd. showed a dynamic range of greater than 5 for a 200 .mu. thick sample and retained more than 80% of the dynamic range after 4 wk exposure at 60.degree.C.

ST ***holog*** data storage media aluminum salt compd asym acrylate
IT ***Holographic*** recording materials
Optical recording
(***holog*** . data storage media comprising aluminum salt compd.
and asym. acrylate compd.)

IT 91-60-1, 2-Naphthalenethiol 106-53-6, 4-Bromophenylthiol 814-68-6,
Acryloyl chloride 865-47-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(***holog*** . data storage media comprising aluminum salt compd.
and asym. acrylate compd.)

IT 630131-13-4P 632331-78-3P
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(***holog*** . data storage media comprising aluminum salt compd.
and asym. acrylate compd.)

IT 630131-12-3P 632331-79-4P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(***holog*** . data storage media comprising aluminum salt compd.
and asym. acrylate compd.)

IT 52292-18-9, Baytec WE-180 116243-07-3, ***Desmodur*** N3200
RL: TEM (Technical or engineered material use); USES (Uses)
(***holog*** . data storage media comprising aluminum salt compd.
and asym. acrylate compd.)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Lee, C; US 5665791 A 1997 CAPLUS
(2) Lucent Technologies Inc; EP 0938027 A 1999 CAPLUS
(3) Mead Corp; EP 0435489 A 1991 CAPLUS

L5 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:875316 CAPLUS

DN 139:351321

ED Entered STN: 07 Nov 2003

TI Incorporable photoinitiator for curing resins

IN Wolf, Jean-Pierre; Huesler, Rinaldo; Peter, Wolfgang; Sommerlade,
Reinhard; Boulmaaz, Souad

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 61 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C08F002-50

ICS G03F007-031; C09D004-00

CC 37-2 (Plastics Manufacture and Processing)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | WO 2003091287 | A1 | 20031106 | WO 2003-EP4035 | 20030417 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | CA 2483004 | AA | 20031106 | CA 2003-2483004 | 20030417 |
| | EP 1499645 | A1 | 20050126 | EP 2003-727317 | 20030417 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | BR 2003009779 | A | 20050308 | BR 2003-9779 | 20030417 |
| | JP 2005523923 | T2 | 20050811 | JP 2003-587844 | 20030417 |
| PRAI | CH 2002-717 | A | 20020426 | | |
| | WO 2003-EP4035 | W | 20030417 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|--|---|
| WO 2003091287 | ICM | C08F002-50 |
| | ICS | G03F007-031; C09D004-00 |
| WO 2003091287 | ECLA | C08F002/50 |
| JP 2005523923 | FTERM | 4C048/AA01; 4C048/BB08; 4C048/BC01; 4C048/UU05;
4C048/XX01; 4C048/XX02; 4C048/XX04; 4H006/AA02;
4H006/AA03; 4H006/AB76; 4H006/AC48; 4H006/BA03;
4H006/BA32; 4H006/BC10; 4H006/BJ50; 4H006/BN10;
4H006/BP10; 4H006/BR30; 4H006/KA03; 4H006/RA10;
4H006/RB34; 4J011/SA61 |
| OS | MARPAT | 139:351321 |
| AB | The compds. PhCOCO ₂ YR ₁ , where Y is C ₃ -12-alkylene, butenylene, butynylene, or C ₄ -12 alkylene interrupted one or more times by non-consecutive O or NR ₂ ; R ₁ is a reactive group selected from OH, SH, NR ₃ R ₄ , (CO)OH, (CO)NH ₂ , SO ₃ H, CR ₅ :CR ₆ R ₇ , oxiranyl, O(CO)NHR ₈ NCO and O(CO)R ₉ (CO)X; R ₂ is H, C ₁ -4-alkyl or C ₂ -4 hydroxyalkyl; R ₃ and R ₄ are each independently of the other hydrogen, C ₁ -4-alkyl or C ₂ -4-hydroxyalkyl ; R ₅ , R ₆ and R ₇ are each independently of the others hydrogen or methyl; R ₈ is, for example, linear or branched C ₄ -12alkylene, or phenylene; R ₉ is, for example, linear or branched C ₁ -16alkylene, CH=CH, CH=CH-CH ₂ , C ₆ -cycloalkylene, phenylene or naphthylene; and X, X ₁ and X ₂ are each independently of the others OH, Cl, OCH ₃ or OC ₂ H ₅ ; are suitable as photoinitiators that can be incorporated in a formulation to be cured. Phenylglyoxylic acid (2-hydroxyethoxy)ethyl ester was prep'd. and used to cure a compn. contg. Ebecryl 604 and Sartomer SR 344. | |
| ST | incorporable photoinitiator phenylglyoxylate ester | |
| IT | Inks | (flexog.; incorporable photoinitiator for curing resins) |
| IT | Coating materials | (gel coats; incorporable photoinitiator for curing resins) |
| IT | Electric cables | (glass fiber-based coatings for; incorporable photoinitiator for curing resins) |
| IT | Adhesives | |
| | Coating materials | |
| | Dental materials and appliances | |
| | ***Holography*** | |
| | Magnetic recording materials | |
| | Optical filters | |
| | Optical switches | |
| | Optical waveguides | |
| | Printing plates | |
| | Resists | |
| | Stereolithography | (incorporable photoinitiator for curing resins) |
| IT | Inks | (lithog.; incorporable photoinitiator for curing resins) |
| IT | Crosslinking catalysts | (photochem., incorporable; incorporable photoinitiator for curing resins) |
| IT | Coating materials | (powder; incorporable photoinitiator for curing resins) |
| IT | Inks | (printing; incorporable photoinitiator for curing resins) |
| IT | Inks | (silk-screen; incorporable photoinitiator for curing resins) |
| IT | 442536-99-4P 619325-76-7P 619325-77-8P 619325-78-9P 619325-79-0P
619325-80-3P 619325-81-4P 619325-82-5P 619325-83-6P | RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) |
| | | (incorporable photoinitiator for curing resins) |
| IT | 619325-84-7P 619325-85-8P | RL: IMF (Industrial manufacture); PREP (Preparation) |
| | | (incorporable photoinitiator for curing resins) |
| IT | 3681-00-3P, Diethylene glycol monoglycidyl ether | RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) |
| | | (incorporable photoinitiator for curing resins) |
| IT | 106-89-8, Epichlorohydrin, reactions 111-46-6, Diethylene glycol, reactions 4098-71-9, Isophorone diisocyanate 9016-87-9,
Desmodur VL 15206-55-0, Phenylglyoxylic acid methyl ester | |

104559-01-5, ***Desmodur*** N 3300 116243-07-3, ***Desmodur*** N
3200 165169-07-3, DesmodurN 3400
RL: RCT (Reactant); RACT (Reactant or reagent)
(incorporable photoinitiator for curing resins)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Ciba-Geigy; EP 0007059 A 1980 CAPLUS
(2) Gruber, G; US 4024297 A 1977 CAPLUS
(3) Stauffer Chem Co; FR 2324648 A 1977 CAPLUS

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:837444 CAPLUS

DN 139:330371

ED Entered STN: 24 Oct 2003

TI ***Holographic*** storage media

IN Trentler, Timothy; Schnoes, Melinda; Coles, Michael; Phan, Xuan

PA Inphase Technologies, Inc., USA

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G11B007-24

ICS G11B007-26

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2003088234 | A1 | 20031023 | WO 2003-US11156 | 20030411 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1493150 | A1 | 20050105 | EP 2003-731016 | 20030411 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| PRAI | US 2002-371407P | P | 20020411 | | |
| | US 2002-371408P | P | 20020904 | | |
| | WO 2003-US11156 | W | 20030411 | | |

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

WO 2003088234 ICM G11B007-24
ICS G11B007-26

WO 2003088234 ECLA G11B007/0065; G11B007/244

AB Described are ***holog*** . storage mediums and method of making ***holog*** . storage mediums. The ***holog*** . storage mediums may have write components that bind to the matrix to form a pattern in the media. The ***holog*** . storage mediums may also be rewriteable.

ST ***holog*** storage media

IT ***Holographic*** recording materials
(***holog*** . storage media)

IT 1210-12-4, 9-Anthracenecarbonitrile 1468-95-7, 9-Anthracenemethanol
116243-07-3, ***Desmodur*** N3200

RL: TEM (Technical or engineered material use); USES (Uses)
(***holog*** . storage media contg.)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Berg, R; US 2002025401 A1 2002 CAPLUS
(2) Dainippon Printing Co Ltd; EP 1022625 A 2000
(3) de Schrijver, F; US 3807999 A 1974
(4) de Schrijver, F; US 3892642 A 1975
(5) Dhar, L; US 6103454 A 2000
(6) Green, M; US 5750049 A 1998

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:133327 CAPLUS
DN 138:171420
ED Entered STN: 21 Feb 2003
TI Process and composition for rapid mass production of ***holographic*** recording article from polyurethane precursors
IN Setthachayanon, Songvit; Schnoes, Melinda
PA Inphase Technologies, Inc., USA
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2

DT Patent

LA English

IC ICM C08G018-10

ICS G11B007-26; G03H001-00

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2003014178 | A1 | 20030220 | WO 2002-US24926 | 20020807 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | US 2003044691 | A1 | 20030306 | US 2002-146115 | 20020516 |
| | US 6743552 | B2 | 20040601 | | |
| | EP 1414878 | A1 | 20040506 | EP 2002-756982 | 20020807 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| | JP 2004537620 | T2 | 20041216 | JP 2003-519124 | 20020807 |
| PRAI | US 2001-310225P | P | 20010807 | | |
| | US 2002-146115 | A | 20020516 | | |
| | WO 2002-US24926 | W | 20020807 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|--|---------------|-------|--|
| | WO 2003014178 | ICM | C08G018-10 |
| | | ICS | G11B007-26; G03H001-00 |
| | WO 2003014178 | ECLA | C08G018/10+18/48; G02B006/122C; G03H001/02; G11B007/0065; G11B007/26; G11C013/04C |
| | US 2003044691 | NCL | 430/001.000 |
| | | ECLA | C08G018/10+18/48; G02B006/122C; G03H001/02; G11B007/0065; G11B007/26; G11C013/04C |
| | EP 1414878 | ECLA | C08G018/10+18/48; G02B006/122C; G03H001/02; G11B007/0065; G11B007/26; G11C013/04C |
| | JP 2004537620 | FTERM | 2K008/AA04; 2K008/DD12; 2K008/DD13; 2K008/FF17; 4J034/DA01; 4J034/DG04; 4J034/DG06; 4J034/HA01; 4J034/HA07; 4J034/HB08; 4J034/HC03; 4J034/HC12; 4J034/HC34; 4J034/HC35; 4J034/HC64; 4J034/HC67; 4J034/HC71; 4J034/JA42; 4J034/MA12; 4J034/MA18; 4J034/RA13; 4J034/RA16 |

AB An optical article comprising a photoactive material and a polymer matrix is formed by a polymg. reaction of a material comprising component 1 and component 2, component 1 comprising a NCO-terminated pre-polymer and the component 2 comprising a polyol; wherein the material has an exotherm peak occurring within 12 min after mixing the component 1 and the component 2. Rapid mass prodn. of high performance ***holog*** . recording articles is described. To prep. a high performance ***holog*** . recording article based on two-component urethane matrix system, for example, polyols and all the additives must be virtually free of moisture contents. Deaeration must be carried out, once isocyanate and polyols including catalysts and all other ingredients are mixed together, to eliminate all entrapped air that is introduced into the mixt. during mixing. The deaeration takes time, and the urethane reaction must not be allowed to take place until all air bubbles are evacuated from the isocyanate-polyols mixt. The rapid mass prodn. of this invention overcomes such process

limitations and results in a high-vol. prodn. of the high performance
holog . recording articles.
ST polyurethane precursor ***holog*** recording material
IT ***Holographic*** recording materials
Optical materials
Optical waveguides
Polymerization
(process and compn. for rapid mass prodn. of ***holog*** . recording
article from polyurethane precursors)

IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(triols, polyurethanes; process and compn. for rapid mass prodn. of
holog . recording article from polyurethane precursors)
IT 9048-57-1DP, Baytec MP 160, polyurethanes with polyoxypropylene triols
25190-06-1DP, Polytetramethylene glycol, polyurethanes 52292-18-9DP,
Baytec WE 180, polyurethanes with polyoxypropylene triols 116243-07-3DP,
Desmodur N3200, polyurethanes with polyoxypropylene triols
151438-81-2P, Mondur TD 168256-05-1DP, Mondur ML, polyurethanes with
polyoxypropylene triols
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(process and compn. for rapid mass prodn. of ***holog*** . recording
article from polyurethane precursors)

IT 25322-69-4D, Polypropylene Oxide, triols, polyurethanes 52794-68-0,
Tribromophenylacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(process and compn. for rapid mass prodn. of ***holog*** . recording
article from polyurethane precursors)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Dainippon Printing; JP 05323850 A 1993 CAPLUS
- (3) Joseph; US 5959775 A 1999

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1995:705475 CAPLUS

DN 123:172078

ED Entered STN: 28 Jul 1995

TI Decorative sheet

IN Oishi, Masayuki

PA Minnesota Mining and Manufacturing Co., USA

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B32B033-00

ICS B32B015-08; B32B027-00; C08G018-61

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 56

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 07112521 | A2 | 19950502 | JP 1993-262264 | 19931020 |
| | JP 3243087 | B2 | 20020107 | | |
| PRAI | JP 1993-262264 | | 19931020 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|-------------|-----|------------------------------------|
| JP 07112521 | ICM | B32B033-00 |
| | ICS | B32B015-08; B32B027-00; C08G018-61 |

AB In the decorative sheet comprising a stabilized resin layer and a
decorative layer, the resin layer is made from a polyurethane resin contg.
a siloxane bond. The decorative layer may be made from a metal thin film
layer, a ***holog*** . layer, or a hairline processed layer. The sheet
can be used as labels, stickers, etc., and exhibited excellent
3-dimensional pattern.

ST decorative sheet ***holog*** pattern; metal thin film decorative
sheet; hairline processed layer decorative sheet

IT Urethane polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(decorative sheets)

IT Polyesters, uses

RL: NUU (Other use, unclassified); USES (Uses)
(silicone-modified; decorative sheets)

IT Building materials
(decorative sheets, polyurethane resin layers)

IT Siloxanes and Silicones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyester-, decorative sheet)

IT Polyesters, uses
RL: NUU (Other use, unclassified); USES (Uses)
(siloxane-, decorative sheet)

IT 7429-90-5, Aluminum, uses 86752-86-5D, ***Desmodur*** Z 4370,
polymers with silicone-modified polyester 167323-83-3
RL: NUU (Other use, unclassified); USES (Uses)
(decorative sheet)

=> s hologra? and 11
17609 HOLOGRA?
15933 HOLOG
13 HOLOGS
15934 HOLOG
(HOLOG OR HOLOGS)
20581 HOLOGRA?
(HOLOGRA? OR HOLOG)
14002 L1
L6 9 HOLOGRA? AND L1

=> s 16 not 15
L7 9 L6 NOT L5

=> d all 1-9

L7 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:458997 CAPLUS
DN 143:142621
ED Entered STN: 31 May 2005
TI ***Holographic*** polymer-dispersed liquid crystal fabrication under electric field
AU Shin, Eui Young; Jung, Ju Ai; Kim, Eun Hee; Kim, Byung Kyu
CS Department of Polymer Science and Engineering, Pusan National University,
Pusan, 609-735, S. Korea
SO Polymer International (2005), 54(6), 922-925
CODEN: PLYIEI; ISSN: 0959-8103
PB John Wiley & Sons Ltd.
DT Journal
LA English
CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
AB The transmission mode of ***holog*** . polymer-dispersed liq. crystals (HPDLCs) was developed under an applied elec. field. Orientation of LC mols. under an elec. field induces orientation of oligomer mols. giving rise to low off-state diffraction and small grating shrinkage.
ST cyanobiphenyl liq crystal dispersion polyurethane acrylate
hologram orientation; elec field liq crystal orientation diffraction grating shrinkage
IT Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(acrylate-terminated; role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)
IT Electrooptical effect
Holographic diffraction gratings
Molecular orientation
Polymer-dispersed liquid crystals
(role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)
IT 103-01-5, N-Phenylglycine
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(co-initiator; role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction

IT gratings based on polymer-dispersed liq. crystal)
88-12-0, uses
RL: DEV (Device component use); USES (Uses)
(homogenizer; role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)

IT 11121-48-5, Rose Bengal
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(photoinitiator; role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)

IT 818-61-1D, end products with polyglycol diisocyanate polymers
822-06-0D , Hexamethylene diisocyanate, polymers with polyglycerol, acrylate-terminated ***9048-90-2D*** , Hexamethylene diisocyanate-poly(propylene glycol) copolymer, acrylate terminated 25618-55-7D, Polyglycerol, polymers with HDI, acrylate-terminated 40817-08-1, K15 Liquid crystal 41122-71-8, K21 Liquid crystal 52364-73-5, M24 Liquid crystal 54211-46-0, T15 Liquid crystal 63748-28-7, E7 Liquid crystal
RL: DEV (Device component use); USES (Uses)
(role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)

IT 124-07-2, Octanoic acid, uses
RL: DEV (Device component use); USES (Uses)
(surfactant; role of elec. field during fabrication on diffraction efficiency and operating voltage of ***holog*** . diffraction gratings based on polymer-dispersed liq. crystal)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bunning, T; J Polym Sci, Polym Phys Ed 1997, V35, P2825 CAPLUS
- (2) Cho, Y; Polym Int 1999, V48, P1085 CAPLUS
- (3) Kim, B; Mol Cryst Liq Cryst 1999, V326, P319 CAPLUS
- (4) Kim, B; Polymer 1998, V39, P5949 CAPLUS
- (5) Kim, J; Mol Cryst Liq Cryst 1991, V203, P93 CAPLUS
- (6) Lin, J; Mol Cryst Liq Cryst 1993, V237, P25 CAPLUS
- (7) Natarajan, L; J Nonlinear Opt Phys Mater 1996, V5, P89 CAPLUS
- (8) Rosa, M; J Appl Polym Sci 1998, V68, P523
- (9) Shen, C; J Chem Phys 1995, V102, P556 CAPLUS
- (10) Sperling, L; Introduction of Physical Polymer Science, 3rd edn 2001
- (11) Sutherland, R; Appl Phys Lett 1994, V64, P1074 CAPLUS
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- (13) Tondiglia, V; Material for optical limiting II, Materials Research Society symposium proceedings 1997, V479, P235 CAPLUS

L7 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:892250 CAPLUS

DN 143:44325

ED Entered STN: 27 Oct 2004

TI Effects of oligomer functionality in ***holographic*** polymer dispersed liquid crystal

AU Shin, Eui Young; Kim, Eun Hee; Kim, Byung Kyu

CS Department of Polymer Science and Engineering, Pusan National University, Pusan, 609-735, S. Korea

SO Journal of the Korean Physical Society (2004), 45(3), 697-699

CODEN: JKPSDV; ISSN: 0374-4884

PB Korean Physical Society

DT Journal

LA English

CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 75

AB The effects of functionality and mol. wt. of polyurethane acrylate (PUA) oligomer and film compn. (LC/resin) on the morphol. and diffraction efficiency of transmission-type ***holog*** . polymer dispersed liq. crystal (HPDLC) have been studied. Low-mol.-wt. and high-functionality oligomer gave better LC-resin phase sepn., due to high immiscibility and crosslink d. A max. diffraction efficiency of over 85 % was obtained with trifunctional polyol, low-mol.-wt. (PG500), with a film compn. of 35/65 (LC/resin).

ST ***holog*** polyurethane acrylate dispersed liq crystal morphol diffraction efficiency

IT Polyurethanes, properties

RL: PRP (Properties); TEM (Technical or engineered material use); USES
(Uses)

(acrylates; effects of oligomer functionality and mol. wt. in
holog . polyurethane acrylate oligomer-dispersed liq. crystals)

IT Crosslinking agents

Crosslinking catalysts

Functional groups

Holographic diffraction gratings

Molecular weight

Polymer morphology

Polymer-dispersed liquid crystals

Young's modulus

(effects of oligomer functionality and mol. wt. in ***holog*** .
polyurethane acrylate oligomer-dispersed liq. crystals)

IT Polyoxyalkylenes, properties

RL: PRP (Properties); TEM (Technical or engineered material use); USES

(Uses)

(effects of oligomer functionality and mol. wt. in ***holog*** .
polyurethane acrylate oligomer-dispersed liq. crystals)

IT 103-01-5, N-Phenylglycine

RL: CAT (Catalyst use); USES (Uses)

(co-initiator; effects of oligomer functionality and mol. wt. in

holog . polyurethane acrylate oligomer-dispersed liq. crystals)

IT 947-19-3, 1-Hydroxycyclohexylphenyl ketone

RL: MOA (Modifier or additive use); USES (Uses)

(crosslinking agent; effects of oligomer functionality and mol. wt. in

holog . polyurethane acrylate oligomer-dispersed liq. crystals)

IT 818-61-1D, polymers with HDI and bisfunctionalized polypropylene glycol or
trifunctionalized polyglycerol ***822-06-0D*** , HDI, polymers with
bisfunctionalized polypropylene glycol or trifunctionalized polyglycerol
and hydroxyethyl acrylate 25322-69-4D, Polypropylene glycol,
bisfunctionalized, polymers with HDI and hydroxyethyl acrylate
25618-55-7D, Polyglycerol, trifunctionalized, polymers with HDI and
hydroxyethyl acrylate

RL: PRP (Properties); TEM (Technical or engineered material use); USES

(Uses)

(effects of oligomer functionality and mol. wt. in ***holog*** .

polyurethane acrylate oligomer-dispersed liq. crystals)

IT 63748-28-7, E 7

RL: PRP (Properties); TEM (Technical or engineered material use); USES

(Uses)

(liq.-cryst.; effects of oligomer functionality and mol. wt. in

holog . polyurethane acrylate oligomer-dispersed liq. crystals)

IT 11121-48-5, Rose Bengal

RL: CAT (Catalyst use); USES (Uses)

(photoinitiator; effects of oligomer functionality and mol. wt. in

holog . polyurethane acrylate oligomer-dispersed liq. crystals)

IT 88-12-0, uses

RL: NUU (Other use, unclassified); USES (Uses)

(reactive diluent; effects of oligomer functionality and mol. wt. in

holog . polyurethane acrylate oligomer-dispersed liq. crystals)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Han, J; J Korean Phys Soc 2002, V40, P849 CAPLUS
- (3) Han, J; J Korean Phys Soc 2003, V43, P45 CAPLUS
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- (5) Kim, B; Polymer 1998, V39, P5949 CAPLUS
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- (7) Pogue, R; Polymer 2000, V41, P733 CAPLUS
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- (9) Shin, D; Appl Opt 1998, V37, P329
- (10) Sutherland, R; SPIE Proc 1994, V2152, P303 CAPLUS
- (11) Whitehead, J; SPIE Proc 2000, V4107, P198

L7 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:512638 CAPLUS

DN 141:62162

ED Entered STN: 25 Jun 2004

TI Stickers having forgery-preventive optically variable devices (OVD) and
manufacture thereof

IN Ota, Akiyoshi; Shindo, Naoki

PA Toppan Printing Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G02B005-30
 ICS B42D015-10; G01N021-84; G02B005-18; G02B005-28; G03H001-18;
 G09F019-12
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 38
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|----------|
| PI JP 2004177540 | A2 | 20040624 | JP 2002-341809 | 20021126 |
| PRAI JP 2002-341809 | | 20021126 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2004177540 | ICM | G02B005-30 |
| | ICS | B42D015-10; G01N021-84; G02B005-18; G02B005-28;
G03H001-18; G09F019-12 |
| JP 2004177540 | FTERM | 2C005/HA01; 2C005/HA02; 2C005/HB01; 2C005/HB04;
2C005/HB10; 2C005/JB05; 2G051/AA73; 2G051/AB20;
2G051/CA11; 2G051/CB01; 2G051/CB06; 2G051/CC07;
2H048/GA04; 2H048/GA05; 2H048/GA07; 2H048/GA33;
2H049/AA25; 2H049/AA40; 2H049/AA43; 2H049/BA03;
2H049/BA42; 2H049/BB62; 2H049/BC22; 2K008/AA13;
2K008/CC01; 2K008/CC03; 2K008/FF13; 2K008/FF14;
2K008/GG05; 2K008/HH12; 2K008/HH18; 2K008/HH19 |

AB The stickers have optically variable device (OVD) layers and layers forming latent (i.e., invisible) images which could be visible with polarizer films. The latent image-formed layers may comprise thermotropic liq. crystal polymers contg. <80% phosphorescent substances or (after-glow) phosphors with av. grain size 1-6000 nm. The stickers may have reflective metal layers on the OVD layers.
 ST forgery preventive optically variable device sticker; thermotropic liq crystal forgery preventive sticker; ***holog*** diffraction grating forgery preventive sticker; phosphor dispersed thermotropic liq cryst polymer sticker
 IT ***Holographic*** diffraction gratings
 (OVD layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Labels
 (adhesive; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Fluorescent dyes
 (forgery-preventive layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Acrylic polymers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (hydroxy-contg., hexamethylene diisocyanate-crosslinked, OVD layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Adhesive films
 (labels, stickers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Acrylic polymers, uses
 Polycarbonates, uses
 Polyesters, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (supports; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
 IT Liquid crystals, polymeric
 (thermotropic; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)

IT 9003-22-9, Vinyl acetate-vinyl chloride copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(OVD layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
IT ***822-06-0*** , Hexamethylene diisocyanate
RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic polyols crosslinked with, OVD layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
IT 405511-34-4, Adeka Chiracol PLC 7003
RL: TEM (Technical or engineered material use); USES (Uses)
(forgery-preventive layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
IT 1314-98-3, Zinc sulfide, uses 7429-90-5, Aluminum, uses 7631-86-9,
Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective layers; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)
IT 25038-59-9, PET (polyester), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(supports; manuf. of forgery-preventive stickers having optically variable image layers phosphor-dispersed thermotropic liq. crystal layers)

L7 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:442898 CAPLUS
DN 141:141089)
ED Entered STN: 01 Jun 2004
TI Reflective ***Holographic*** Polymer-Dispersed Liquid Crystal Films
Based on Polyurethane Acrylates
AU Woo, Ju Yeon; Park, Min Sang; Kim, Byung Kyu; Kim, Jae Chang; Kang, Young
Soo
CS Department of Polymer Science and Engineering, Pusan National University,
Pusan, 608-735, S. Korea
SO Journal of Macromolecular Science, Physics (2004), B43(4), 833-843
CODEN: JMAPBR; ISSN: 0022-2348
PB Marcel Dekker, Inc.
DT Journal
LA English
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 35, 73, 75
AB The effect of prepolymer structure on the reflection efficiency and vol. shrinkage of ***holog*** . gratings based on polymer-dispersed liq. crystals (PDLCs) was studied. It was found that reflection efficiency increased with decreasing mol. wt. of the polyurethane (PU) segments bridging the cross-linked acrylate domains and with the decrease of chain rigidity of the hard segment of PU. For this particular matrix system, vol. shrinkage increased with increasing chain flexibility and crosslinking d., corresponding to increases in the reflection efficiency. Real time measurement of reflection efficiency during curing showed that high functionality polypropylene glycol (PPG) gave the shortest time to arrive at the satn. value although an optimum PPG functionality exists for the max. reflection.
ST polyurethane acrylate dispersed liq crystal film reflective ***holog***
IT Polyurethanes, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC
(Process)
 (acrylates; reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)
IT Crosslink density
 (effect; reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)
IT Polymer chains
 (flexible, flexibility effect; reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)
IT Contraction (mechanical)
Polymer morphology
UV and visible spectra

(of polymer-dispersed liq. crystal films based on polyurethane acrylates)

IT Optical reflection

Polymer-dispersed liquid crystals

(reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)

IT 40817-08-1, 4-n-Pentyl-4'-cyanobiphenyl 41122-71-8, 4-n-Heptyl-4'-

cyanobiphenyl 52364-73-5 54211-46-0, 4-Pentyl-4'-cyano-p-terphenyl

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)

(liq. crystal; reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)

IT 727363-66-8P, 2-Hydroxyethyl acrylate-isophorone diisocyanate-

poly(propylene glycol)-trimethylolpropane triacrylate-N-vinylpyrrolidone copolymer ***727363-68-0P*** , Hexamethylene diisocyanate-2-

hydroxyethyl acrylate-poly(propylene glycol)-trimethylolpropane triacrylate-N-vinylpyrrolidone copolymer 727363-70-4P,

4,4'-Diphenylmethane diisocyanate-2-hydroxyethyl acrylate-poly(propylene glycol)-trimethylolpropane triacrylate-N-vinylpyrrolidone copolymer

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(reflective ***holog*** . polymer-dispersed liq. crystal films based on polyurethane acrylates)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bowley, C; Appl Phys Lett 2000, V76, P2235 CAPLUS
- (2) Bunning, T; Annual Rev Mater Sci 2000, V83, P115
- (3) Colvi, V; J Appl Phys 1997, V81, P5913
- (4) Date, M; J Soc Infor Display 1999, V99(7/1), P17
- (5) Drzaic, P; Appl Phys Lett 1993, V62, P1332 CAPLUS
- (6) Ishi, Y; 16th International Display Research Conference 1996, 9, P115
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- (13) Maruyama, K; The Seventh International Display Workshops 2000, P161
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- (15) Park, M; Polymer 2003, V44, P1595 CAPLUS
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- (18) Tanaka, K; Society for Information Display 95 DIGEST 1995, P268 CAPLUS
- (19) Vaia, R; Polymer 2001, V42, P1055 CAPLUS
- (20) Warren, G; Soc Information Display 01 DIGEST 2001, P866

L7 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:99111 CAPLUS

DN 140:288057

ED Entered STN: 06 Feb 2004

TI Diffraction grating in noncrosslinked polymers

AU Kim, Eun Hee; Kim, Byung Kyu

CS Department of Polymer Science and Engineering, Pusan National University, Pusan, 609-735, S. Korea

SO Journal of Polymer Science, Part B: Polymer Physics (2004), 42(4), 613-620
CODEN: JPBPEM; ISSN: 0887-6266

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 37-3 (Plastics Manufacture and Processing)

AB The diffraction efficiency and morphol. of the transmission modes of ***holog*** . polymer-dispersed liq. crystals were studied with respect to the mol. structure of poly(urethane acrylate) (PUA), the film (polymer/liq. crystal) and resin (oligomer/monomer) compns., and the cell thickness. PUA, based on N-vinylpyrrolidone and Et hexyl acrylate, with low-mol.-wt. poly(propylene glycol) at a low oligomer content, showed high diffraction efficiency. The results were interpreted in terms of the monomer reactivity and polymer elasticity.

ST ***holog*** diffraction grating polymer dispersed liq crystal

IT ***Holographic*** diffraction gratings

Polymer-dispersed liquid crystals

(***holog*** . diffraction grating liq. crystals dispersed in vinyl-crosslinked polyurethane acrylates)
IT ***39317-67-4*** , 2-Hydroxyethyl methacrylate-1,6-diisocyanatohexane-polypropylene glycol copolymer 675609-90-2, N-Vinylpyrrolidone-2-hydroxyethyl methacrylate-1,6-diisocyanatohexane-polypropylene glycol copolymer 675609-91-3, 2-Ethylhexyl methacrylate-2-hydroxyethyl methacrylate-1,6-diisocyanatohexane-polypropylene glycol copolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(***holog*** . diffraction grating liq. crystals dispersed in vinyl-crosslinked polyurethane acrylates)

IT 63748-28-7, E7
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(liq. crystal; ***holog*** . diffraction grating liq. crystals dispersed in vinyl-crosslinked polyurethane acrylates)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bird, R; Dynamics of Polymeric Liquids 1977
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- (5) Bunning, T; Polymer 1995, V36, P2699 CAPLUS
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- (10) Kim, B; Polymer 1998, V39, P5949 CAPLUS
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- (12) Mark, J; Physical Properties of Polymers 1984
- (13) Miyamoto, Y; New Polym Mater 1990, V2, P1
- (14) Odian, G; Principles of Polymerization 1981
- (15) Patnaik, S; Polymer 1999, V40, P6507 CAPLUS
- (16) Sutherland, R; Appl Phys Lett 1994, V64, P1074 CAPLUS

L7 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:221943 CAPLUS

DN 138:245682

ED Entered STN: 21 Mar 2003

TI Environmentally durable, self-sealing optical articles

IN Dhar, Lisa; Setthachayanon, Songvit; Schnoes, Melinda; Michaels, Mark David

PA Inphase Technologies, Inc., USA

SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2

DT Patent

LA English

IC ICM G03F007-00

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2003023519 | A1 | 20030320 | WO 2002-US28937 | 20020912 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | US 2003087104 | A1 | 20030508 | US 2002-207158 | 20020730 |
| | US 6765061 | B2 | 20040720 | | |
| | JP 2005502918 | T2 | 20050127 | JP 2003-527516 | 20020912 |
| PRAI | US 2001-322234P | P | 20010913 | | |
| | US 2002-207158 | A | 20020730 | | |
| | WO 2002-US28937 | W | 20020912 | | |

| CLASS | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------|---------------|-------|---|
| | WO 2003023519 | ICM | G03F007-00 |
| | WO 2003023519 | ECLA | G03F007/00B3 |
| US | 2003087104 | NCL | 428/422.800 |
| | | ECLA | G03F007/00B3 |
| JP | 2005502918 | FTERM | 2K008/AA04; 2K008/AA12; 2K008/DD13; 2K008/FF08;
2K008/FF17; 5D029/JA04 |

AB ***Holog*** . articles having self-sealing properties such as moisture resistance and environmental durability are disclosed. The ***holog*** . articles are formed by the reaction of a compn. contg. an excess amt. (i.e. non-stoichiometric amt.) of polyisocyanates to polyols. The ***holog*** . recording articles exhibit high optical clarity and low scattering.

ST ***holog*** recording environmentally durable self sealing optical articles

IT ***Holography***

(environmentally durable, self-sealing optical articles for)

IT Polyoxyalkylenes, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(triol; environmentally durable, self-sealing optical articles for
holog . recording contg.)

IT ***28574-90-5***

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(biuret; environmentally durable, self-sealing optical articles for
holog . recording contg.)

IT 25322-69-4D, Polypropylene oxide, triol 52292-18-9, Baytec WE 180

52794-68-0, Tribromophenyl acrylate 501666-89-3, Polyfox T

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(environmentally durable, self-sealing optical articles for
holog . recording contg.)

IT 128-37-0, BHT, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(environmentally durable, self-sealing optical articles for
holog . recording contg.)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Lucent Technologies Inc; EP 0945762 A 1999 CAPLUS

(2) Lucent Technologies Inc; EP 1026546 A 2000 CAPLUS

L7 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:114598 CAPLUS

DN 138:409277

ED Entered STN: 14 Feb 2003

TI Reflective mode of HPDLC with various structures of polyurethane acrylates

AU Park, Min Sang; Kim, Byung Kyu; Kim, Jae Chang

CS Department of Polymer Science and Engineering, Pusan National University,
Pusan, 609-735, S. Korea

SO Polymer (2003), 44(5), 1595-1602

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Science Ltd.

DT Journal

LA English

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

AB ***Holog*** . polymer dispersed liq. crystals were prep'd. from
photocurable polyurethane acrylate of various structures and a nematic
liq. crystal mixt. upon curing the reactive diluents and hydroxyethyl
acrylate terminated (HEA) polyurethane prepolymers. The effects of
prepolymer mol. structure were studied in terms of reflection efficiency,
polymer vol. shrinkage and electrooptic properties. Emphases have been
made to improve the reflection efficiency and shrinkage of ***holog***
. grating during fabrications by modifying soft segment length and hard
segment structures of the prepolymer. It was found that polyurethanes
with short soft segment and flexible hard segment gave high reflection
efficiency and vol. shrinkage as well.

ST ***holog*** polymer dispersed liq crystal photocurable polyurethane
acrylate

IT Polyurethanes, reactions
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (acrylates; electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT Polyoxyalkylenes, reactions
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (bis-terminated with diisocyanates, urethane with hydroxyethyl methacrylate, prepolymer; electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT Electrooptical effect
 Holographic diffraction gratings
 Optical reflection
 Polymer-dispersed liquid crystals
 (electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT Crosslinking
 (photochem.; electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT 63748-28-7, E7(Liquid crystal)
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT 103-01-5, N-Phenylglycine 11121-48-5, Rose bengal
 RL: CAT (Catalyst use); USES (Uses)
 (prepolymer; electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

IT 88-12-0, reactions 818-61-1D, reaction products with diisocyanate-bis-terminated polypropylene glycol ***822-06-0D*** , Hexamethylene diisocyanate, urethane acrylates with polypropylene glycol and 2-hydroxyethyl acrylate 4098-71-9D, Isophorone diisocyanate, urethane acrylates with polypropylene glycol and 2-hydroxyethyl acrylate 15625-89-5 25322-69-4D, Polypropylene glycol, bis-terminated with diisocyanates, urethane with hydroxyethyl methacrylate 26471-62-5D, Toluene diisocyanate, urethane acrylates with polypropylene glycol and 2-hydroxyethyl acrylate
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (prepolymer; electrooptical properties of ***holog*** . polymer dispersed liq. crystals as function of mol. structure of photosensitive prepolymer compn.)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bowley, C; Appl Phys Lett 2000, V76, P2235 CAPLUS
- (2) Bunning, T; Annu Rev Mater Sci 2000, V83, P115
- (3) Cho, Y; Polym Int 1999, V48, P1085 CAPLUS
- (4) Colvi, V; J Appl Phys 1997, V81, P5913
- (5) Date, M; J SID 1999, V7/1, P17
- (6) Drzaic, P; Appl Phys Lett 1993, V73, P1332
- (7) Escuit, M; Appl Phys Lett 2000, V77, P4262
- (8) Gipparrone, G; Opt Commun 1998, V150, P297
- (9) Ishii, Y; Proceedings of the 16th International Display Research Conference 1996, 9, P115
- (10) Kajiyama, T; Chem Lett 1987, P817
- (11) Kato, K; Electron Commun Jpn Pt 2 1998, V81, P32
- (12) Kim, B; Mol Cryst Liq Cryst 1999, V326, P319 CAPLUS
- (13) Kim, B; Polymer 1998, V39, P5949 CAPLUS
- (14) Kim, B; Polymer 2000, V41, P1325 CAPLUS
- (15) Lee, K; Polymer 1998, V37, P2251
- (16) Maruyama, K; IDW 00 2000, P161
- (17) Miyamoto, Y; New Polym Mater 1990, V2, P1
- (18) Odian, G; Principles of polymerization 1981
- (19) Patnaik, S; Polymer 1999, V40, P6507 CAPLUS
- (20) Pouge, R; Polymer 2000, V41, P733

(21) Saitoh, G; SID 01 DIGEST 2001, P344
 (22) Tanaka, K; SID95 DIGEST 1995, P268 CAPLUS
 (23) Vaia, R; Polymer 2001, V42, P1055 CAPLUS
 (24) Warren, G; SID 01 DIGEST 2001, P866
 (25) Zhang, J; J Am Chem Soc 1994, V116, P7055 CAPLUS

L7 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2001:581592 CAPLUS
 DN 135:161517
 ED Entered STN: 10 Aug 2001
 TI Magnetic recording medium having so-called optical variable device layer
 IN Yamada, Hideyuki; Shindo, Naoaki
 PA Toppan Printing Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G11B005-80
 ICS B42D015-10; G11B005-84
 CC 77-8 (Magnetic Phenomena)
 Section cross-reference(s): 74

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------|------|----------|-----------------|----------|
| PI JP 2001216632 | A2 | 20010810 | JP 2000-23013 | 20000131 |
| PRAI JP 2000-23013 | | 20000131 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2001216632 | ICM | G11B005-80 |
| | ICS | B42D015-10; G11B005-84 |

AB The recording medium has a magnetic recording layer, a hiding layer made of an elec. nonconductive thin film with matte surface, and the optical variable layer generating color shift by ***holog*** or diffraction gratings. The medium, suitable for a card with counterfeit deterrence effect, shows prevention of electrostatic recording and prevention of reading error.

ST magnetic recording medium optical variable device; ***holog*** diffraction grating magnetic recording medium; hiding layer elec nonconductive film; matte surface hiding layer magnetic recording

IT Embossing
 Sandblasting
 (for manuf. of magnetic recording medium having ***hologram*** or grating layer assocd. with hiding layer with matte surface)

IT Diffraction gratings
 Holography
 Magnetic recording materials
 (magnetic recording medium having ***hologram*** or grating layer assocd. with elec. nonconducting hiding layer with matte surface)

IT Polyurethanes, uses
 RL: DEV (Device component use); USES (Uses)
 (polyester-, ***holog***.; magnetic recording medium having ***hologram*** or grating layer assocd. with elec. nonconducting hiding layer with matte surface)

IT 7440-31-5, Tin, uses
 RL: DEV (Device component use); USES (Uses)
 (cover layer; magnetic recording medium having ***hologram*** or grating layer assocd. with elec. nonconducting hiding layer with matte surface)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (gratings; magnetic recording medium having ***hologram*** or grating layer assocd. with elec. nonconducting hiding layer with matte surface)

IT 13463-67-7, Titania, uses
 RL: DEV (Device component use); USES (Uses)
 (***holog***.; magnetic recording medium having ***hologram*** or grating layer assocd. with elec. nonconducting hiding layer with matte surface)

IT ***822-06-ODP***, Hexamethylene diisocyanate, polyester-polyurethanes
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)

(magnetic recording medium having ***hologram*** or grating layer
assocd. with elec. nonconducting hiding layer with matte surface)

L7 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:551298 CAPLUS

DN 133:170285

ED Entered STN: 11 Aug 2000

TI Duplication method for relief ***hologram***

IN Arai, Toshio; Kobayashi, Atsushi; Maekawa, Susumu

PA Daiwa Can Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03H001-20

ICS G02B005-32

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------|------|----------|-----------------|----------|
| PI JP 2000221870 | A2 | 20000811 | JP 1999-25577 | 19990202 |
| PRAI JP 1999-25577 | | 19990202 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2000221870 | ICM | G03H001-20 |
| | ICS | G02B005-32 |

AB The duplication method for a relief ***hologram*** includes the steps of: irradiating UV or electron beam in 20-70 reaction rate on an UV- or electron beam-sensitive resin layer having 1-10 mol/kg concn. of UV- or electron beam-sensitive functional groups on a substrate; pressing an original relief ***hologram*** on the resin layer to transfer the pattern; and UV- or electron beam-curing the resin layer in .gtoreq.80 % reaction rate to harden the resin. The method is applicable to a liq., half-solid, or solid UV- or electron beam-sensitive resin as a duplicating material.

ST duplication method ***hologram***

IT Recording

(duplication method for relief ***hologram***)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(duplication method of relief ***hologram***)

IT ***Holography***

(duplication; duplication method of relief ***hologram***)

IT 947-19-3, Irgacure 184 1680-21-3, Light Acrylate 3EG-A 24650-42-8,
Irgacure 651 29294-36-8, Vylon 300 29570-58-9, Light Acrylate DPE 6A
29829-07-0, HPE 3150 ***95971-16-7*** , UA 306H 104558-95-4, Cyracone
UVI 6990

RL: TEM (Technical or engineered material use); USES (Uses)

(relief ***hologram***)

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

48.15

86.02

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-10.22

-10.22

STN INTERNATIONAL LOGOFF AT 17:08:30 ON 19 SEP 2005

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|-------|--|---|------------------|---------|------------------|
| L1 | 580 | (diisocyanate\$4 or polyisocyanate\$1) and hologra\$6 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:49 |
| L2 | 371 | ((diisocyanate\$4 or polyisocyanate\$1) same (urethane\$1 or polyurethane\$1)) and hologra\$6 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:50 |
| L3 | 36 | ((break\$4 or elongation) near5 (strain or strength)) same (hologra\$6 near5 (film or layer)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:45 |
| L4 | 7006 | ((matrix or matrices) with (urethane\$1 or polyurethane\$1)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:50 |
| L5 | 65548 | ((diisocyanate\$4 or polyisocyanate\$1) same (urethane\$1 or polyurethane\$1)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:51 |
| L6 | 6891 | ((diisocyanate\$4 or polyisocyanate\$1) with (dimer\$4 or trimer\$6)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:51 |
| L7 | 8663 | ((diisocyanate\$4 or polyisocyanate\$1) with (desmodur or desmoduren3400 or desmodurN3600 or dimer\$4 or trimer\$6)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:57 |
| L8 | 2837 | I5 same I7 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:53 |
| L9 | 494 | I4 same (I5 or I7) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:53 |
| L10 | 29 | I8 and I9 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/09/19 14:54 |

| | | | | | | |
|-----|-------|--|---|----|----|------------------|
| L11 | 70 | I7 and I2 | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 14:57 |
| L12 | 70 | I11 not I10 | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 14:58 |
| L13 | 43 | I12 and @ad<"20010627" | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 15:02 |
| L14 | 36042 | (rotto or dhar or kates or hale or schilling or schnoes).in. or (lucent or imation).asn. | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 15:01 |
| L15 | 40357 | (rotto or dhar or katz or hale or schilling or schnoes).in. or (lucent or imation).asn. | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 15:34 |
| L16 | 34 | I15 and I7 | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 15:08 |
| L17 | 1 | (rotto).in. and (quinoline or quinaldehyde) | US-PGPUB;
USPAT;
EPO; JPO;
DERWENT;
IBM_TDB | OR | ON | 2005/09/19 15:35 |